

POLAR TIDE/PSI

start time: 10/09/01 13:10:57 UT

stop time: 10/09/01 22:20:33 UT

4 spins averaged

collapse option 2

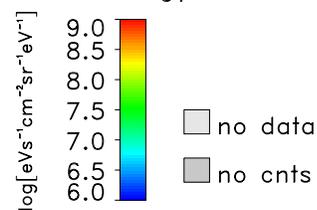
ranges used for sum:

Obs.energy: 0.32 - 410.62 eV

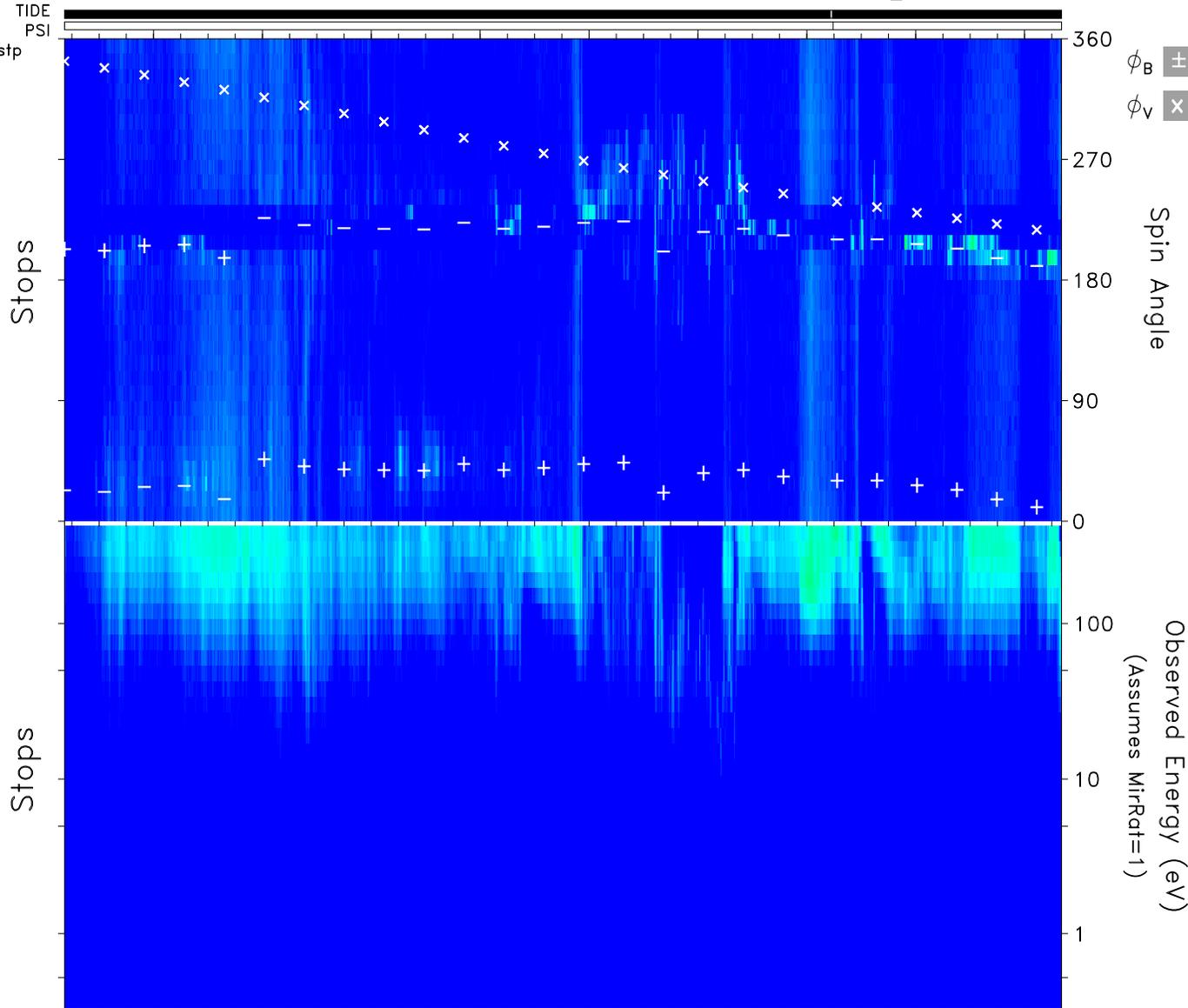
spin angle: 0.00° - 360.00°

polar channels: 1 - 7

Energy Flux



- standby
- op
- off
- mir stp



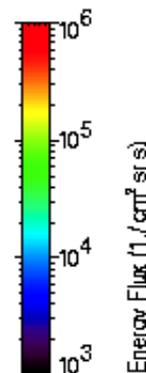
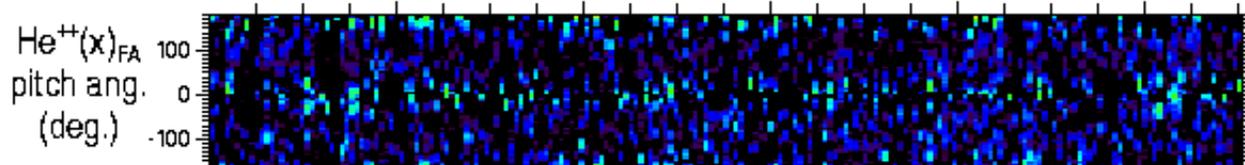
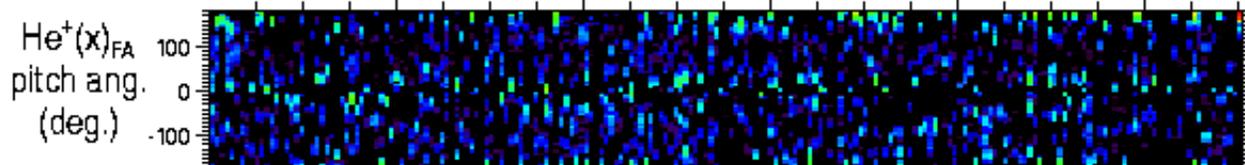
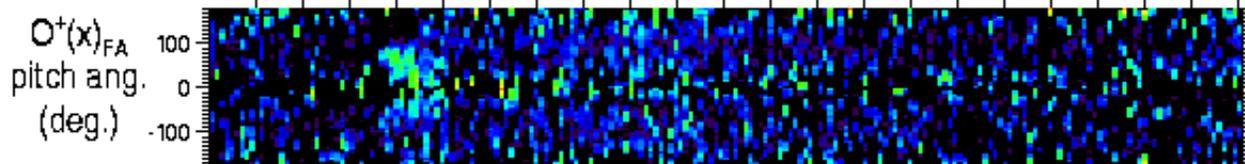
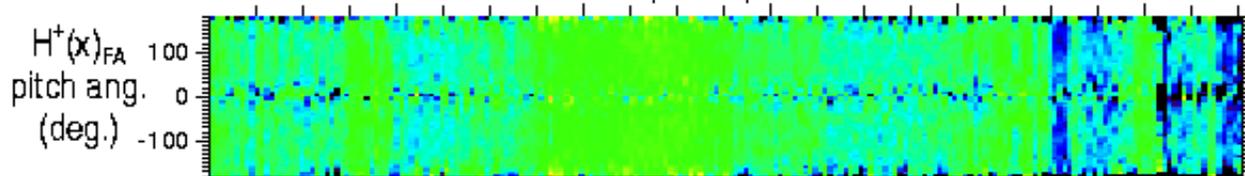
time	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	hr:mn
Re	9.2	9.5	9.6	9.5	9.2	8.8	8.2	7.4	6.4	Re
Lshell	9.2	9.4	9.5	9.6	9.7	10.0	10.4	11.4	13.5	
mlt	23.2	23.2	23.2	23.3	23.4	23.5	23.7	23.9	0.2	hrs
mlat	-5.5	-1.6	2.7	7.7	13.4	19.9	27.4	36.0	46.3	degs
invlat	70.8	71.0	71.1	71.2	71.3	71.5	72.0	72.7	74.2	degs

fide_lz_v5.5.0
 Fri Oct 12 04:18:55 2001
 plot: t0110091310_2220_sp.eshtr.ps
 no minimum subtracted

sector_sens: no correction
 calibration: fide_calib.v6
 mass_calibration: mass_calib.v7
 ion_mask: t011009_v2.mask

s/c potential = 0.0000
 attitude: 01100903.cdf
 orbit: 01100903.cdf
 level-zero: 01100900.dat

Polar / Timas: 09-OCT-2001 (01282)



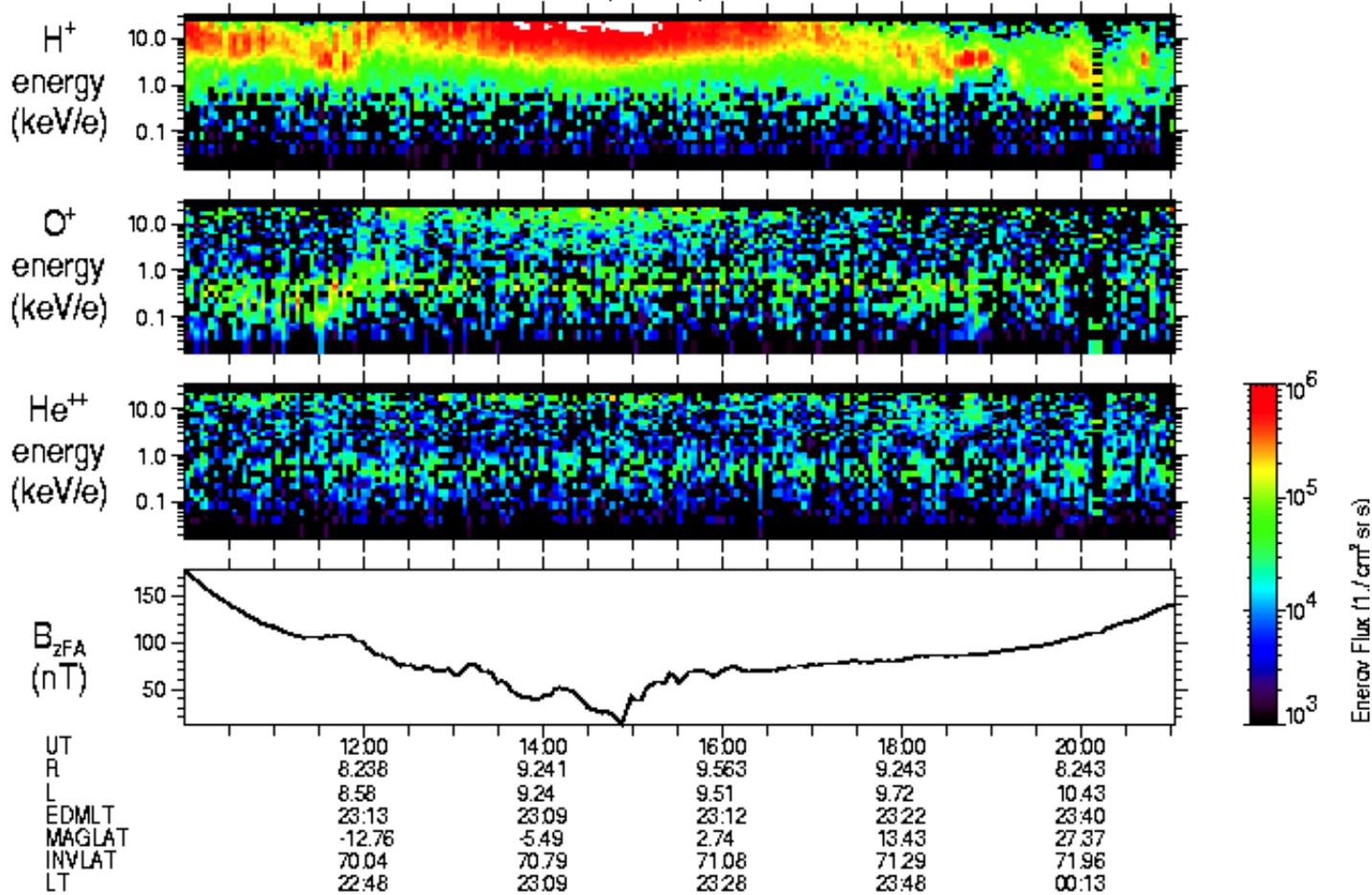
UT	12:00	14:00	16:00	18:00	20:00
R	8.238	9.241	9.563	9.243	8.243
L	8.58	9.24	9.51	9.72	10.43
EDMLT	23:13	23:09	23:12	23:22	23:40
MAGLAT	-12.76	-5.49	2.74	13.43	27.37
INVLAT	70.04	70.79	71.08	71.29	71.96
LT	22:48	23:09	23:28	23:48	00:13

Averaging period: 32 spins

Energy Range: 0.900 - 25.00 keV/e

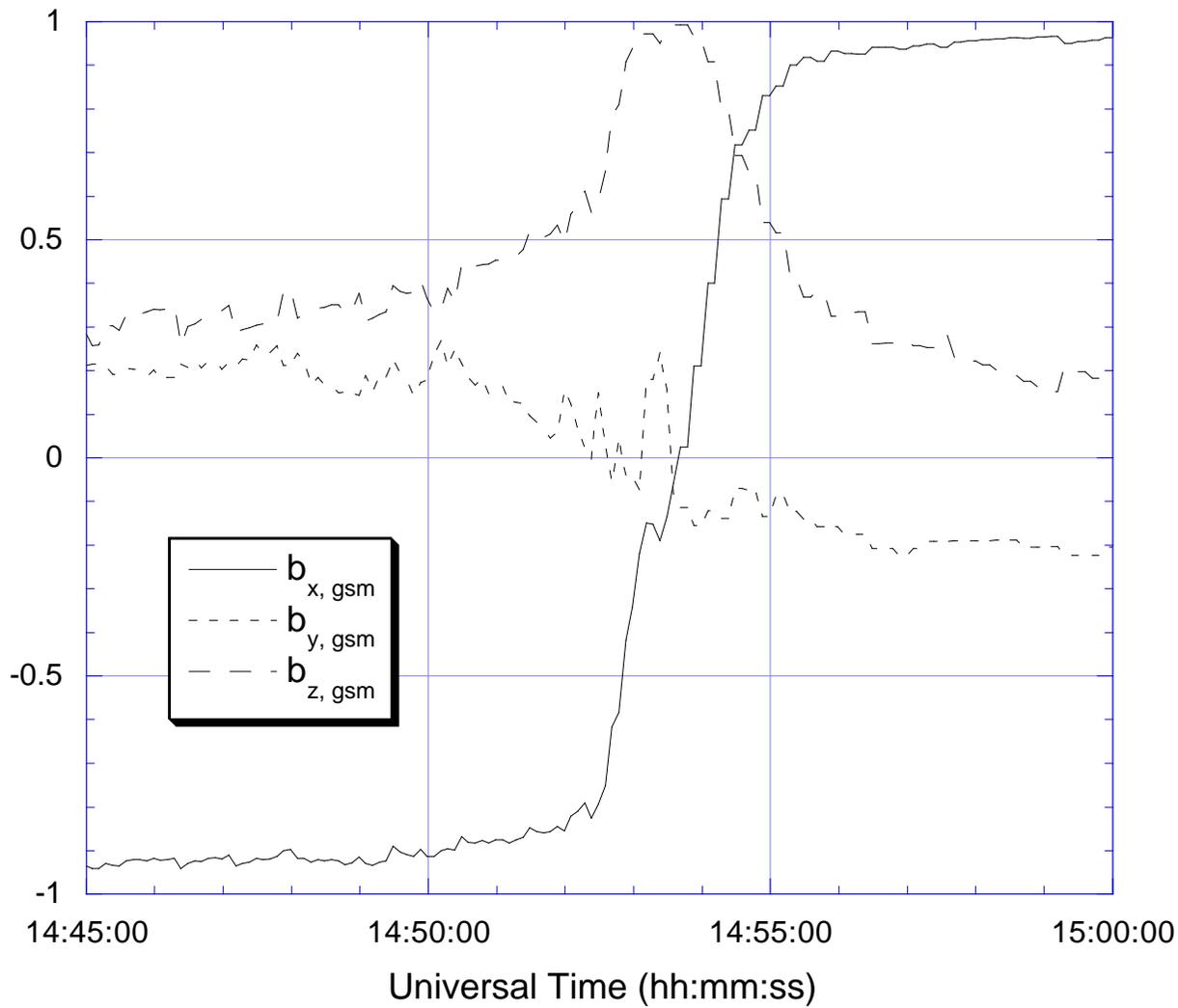
Tue Oct 16 16:09:40 2001

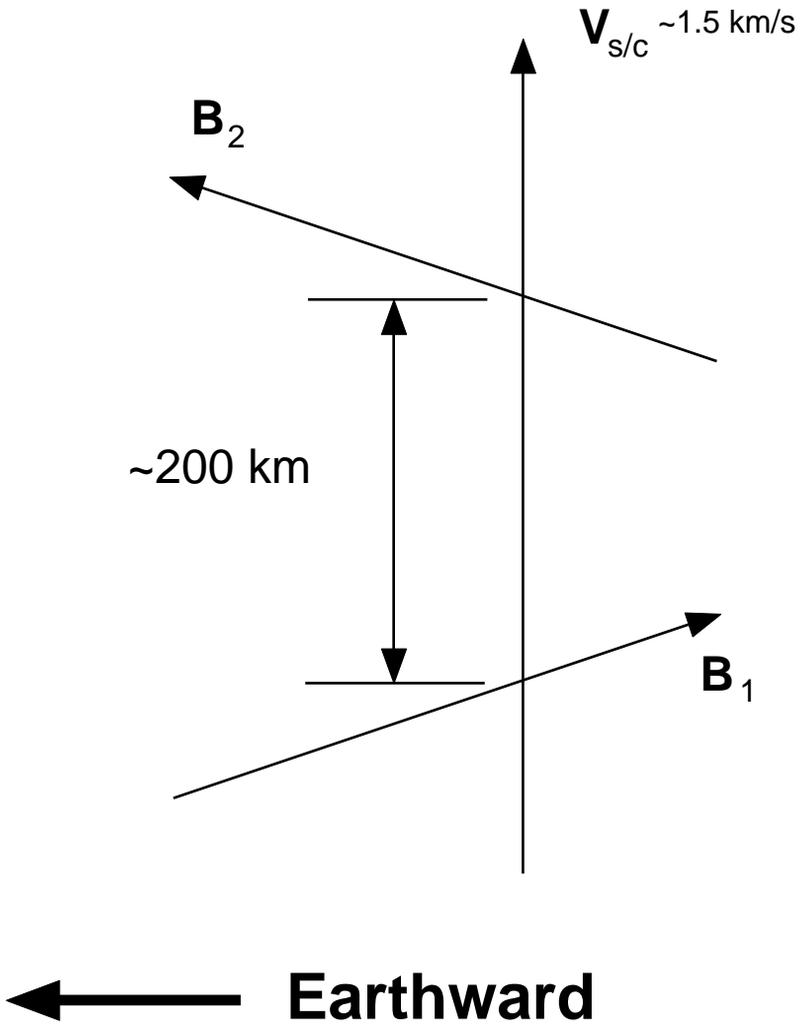
Polar / Timas: 09-OCT-2001 (01282)



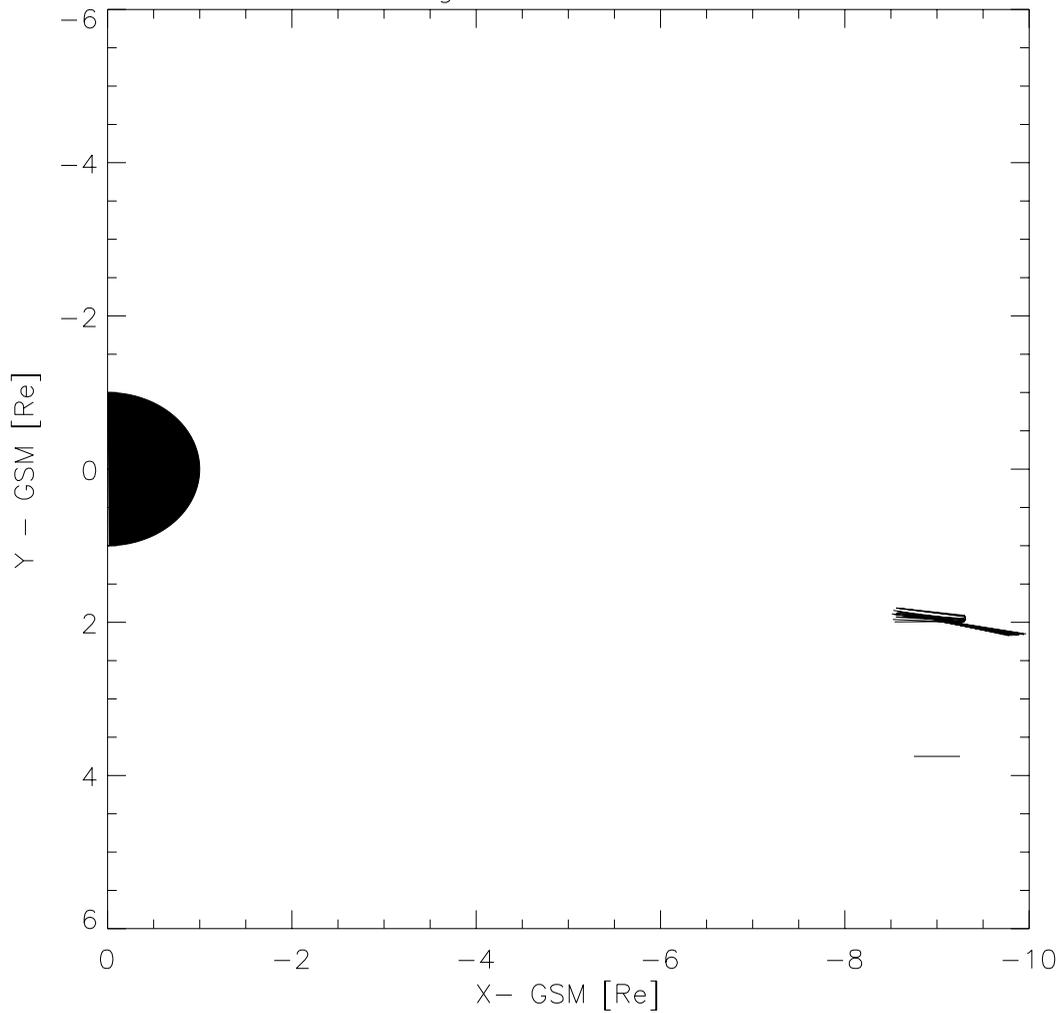
Averaging period: 32 spins

Tue Oct 16 16:09:36 2001

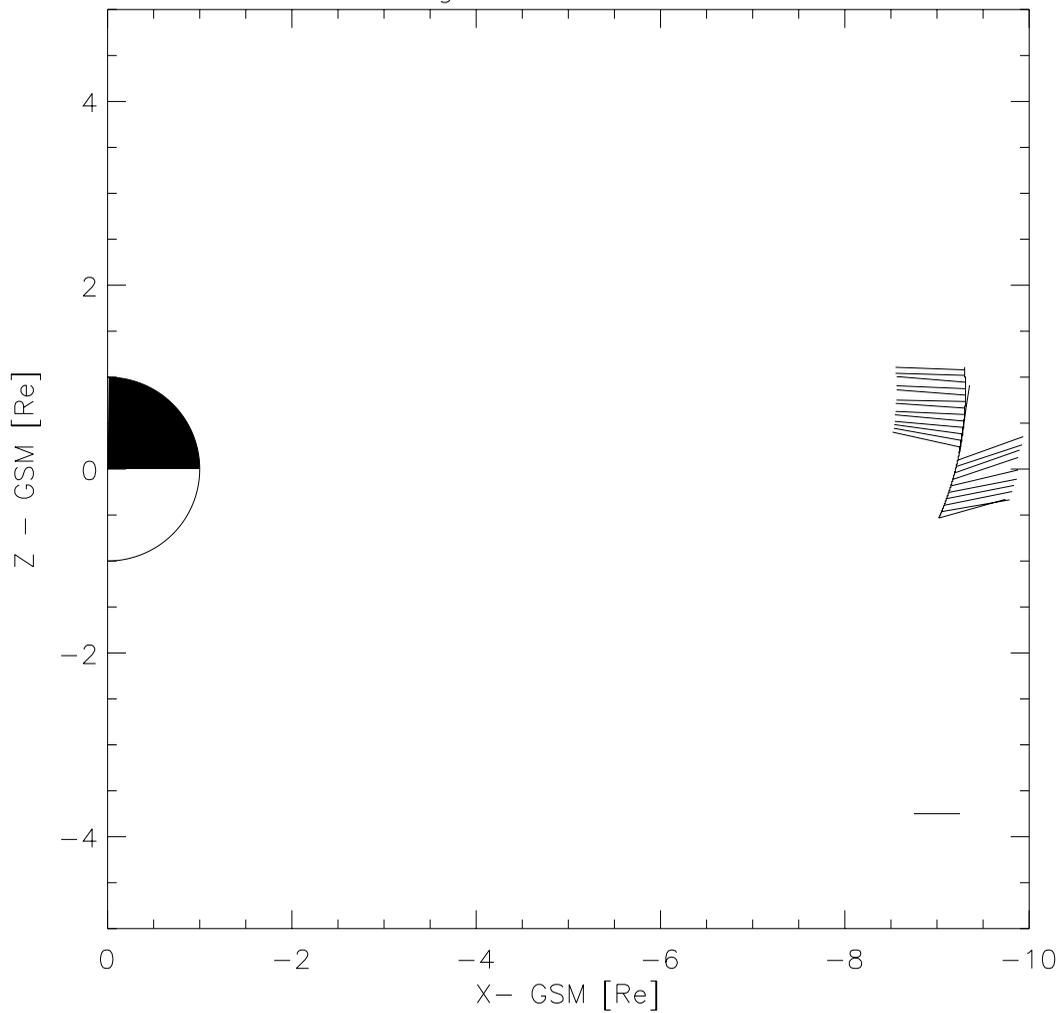




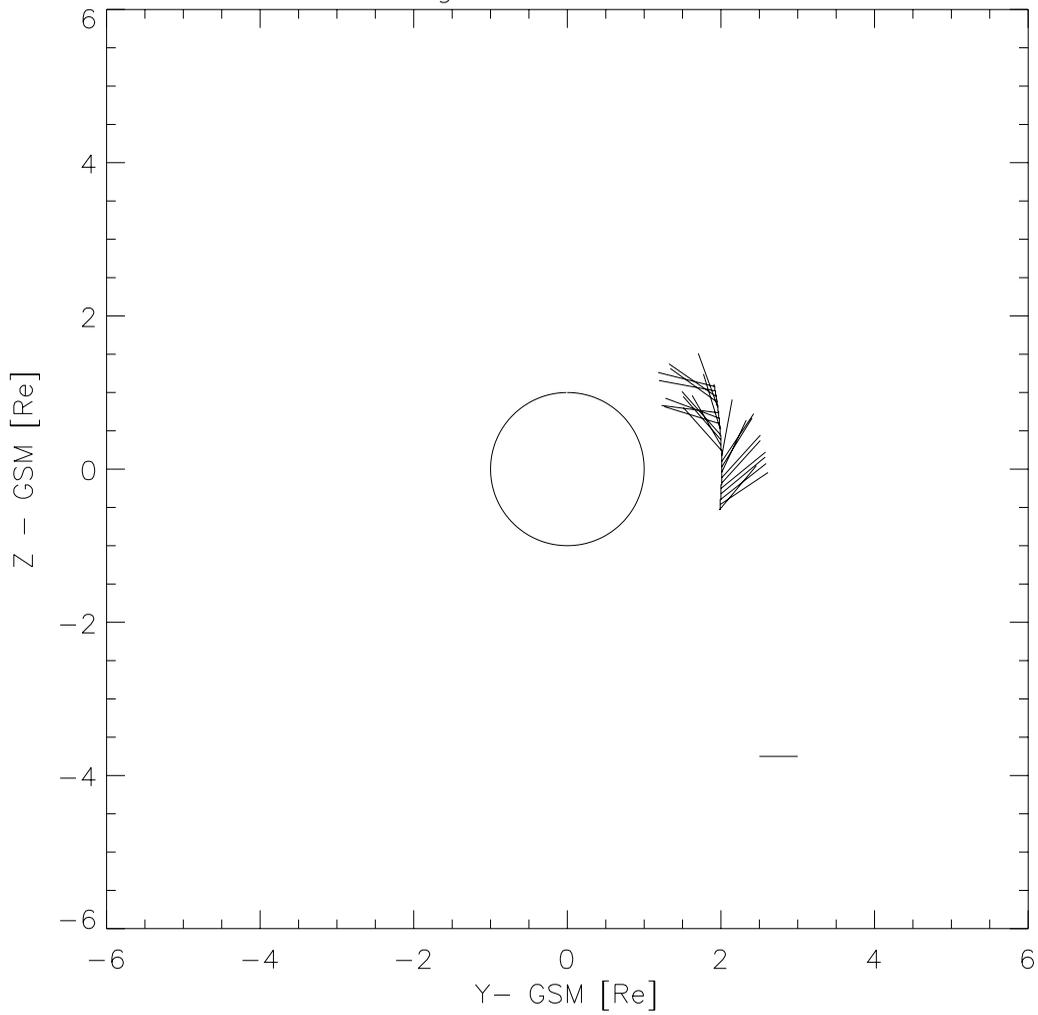
Geomagnetic Field from MFE



Geomagnetic Field from MFE

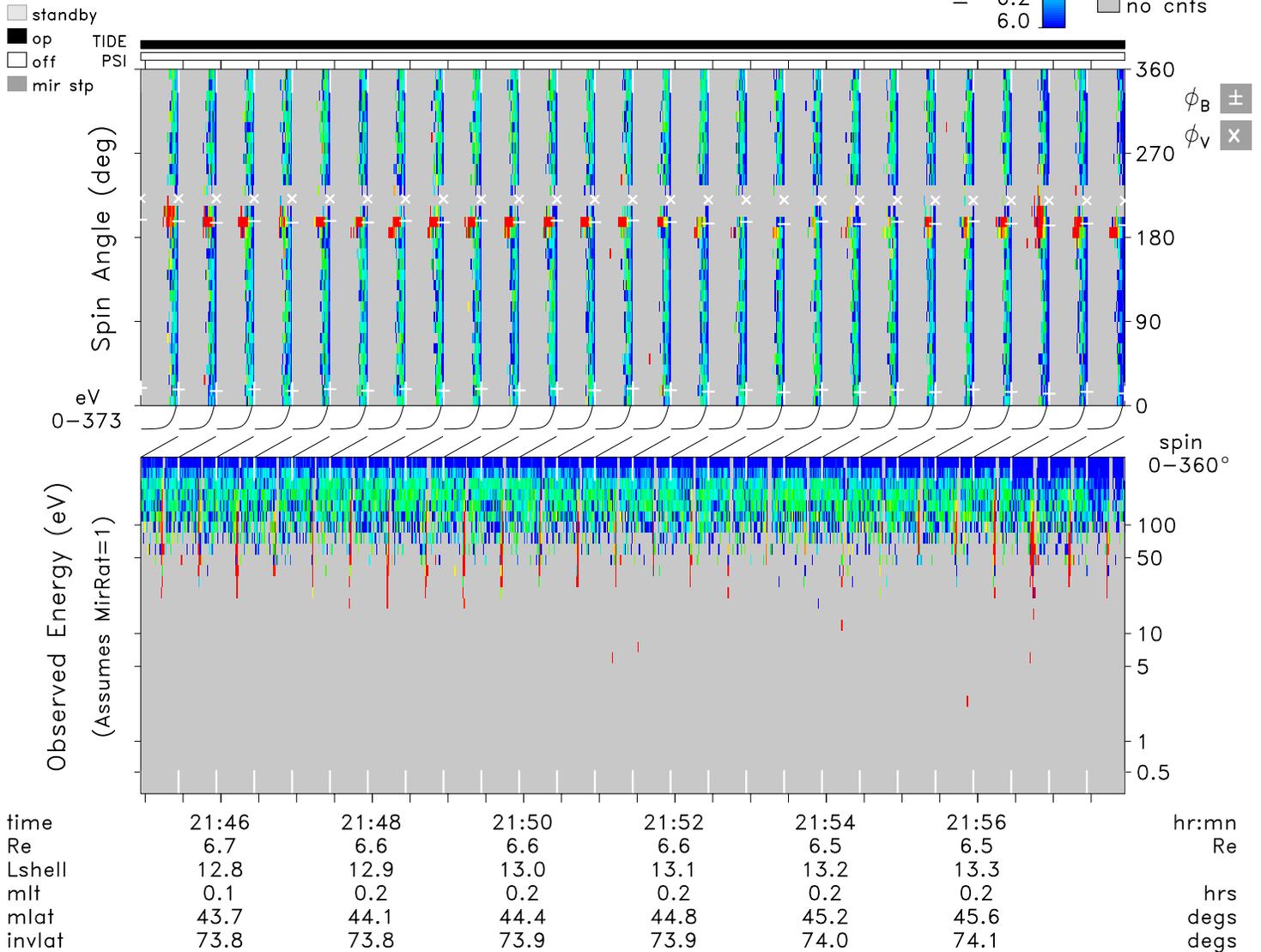
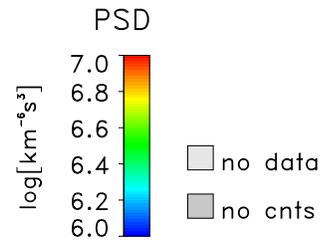


Geomagnetic Field from MFE



POLAR TIDE/PSI
 start time: 10/09/01 21:44:56 UT
 stop time: 10/09/01 21:57:57 UT
 5 spins averaged
 collapse option 2
 spin marker at sun pulse

Stops(H+)



tide_lz_v5.5.0
 Fri Oct 12 10:14:58 2001
 plot: t0110092144_2157_sp.q7116.esse.ps
 minimum count subtracted

sector_sens: no correction
 calibration: tide_calib.v6
 mass_calibration: mass_calib.v7
 ion_mask: t011009_v2.mask

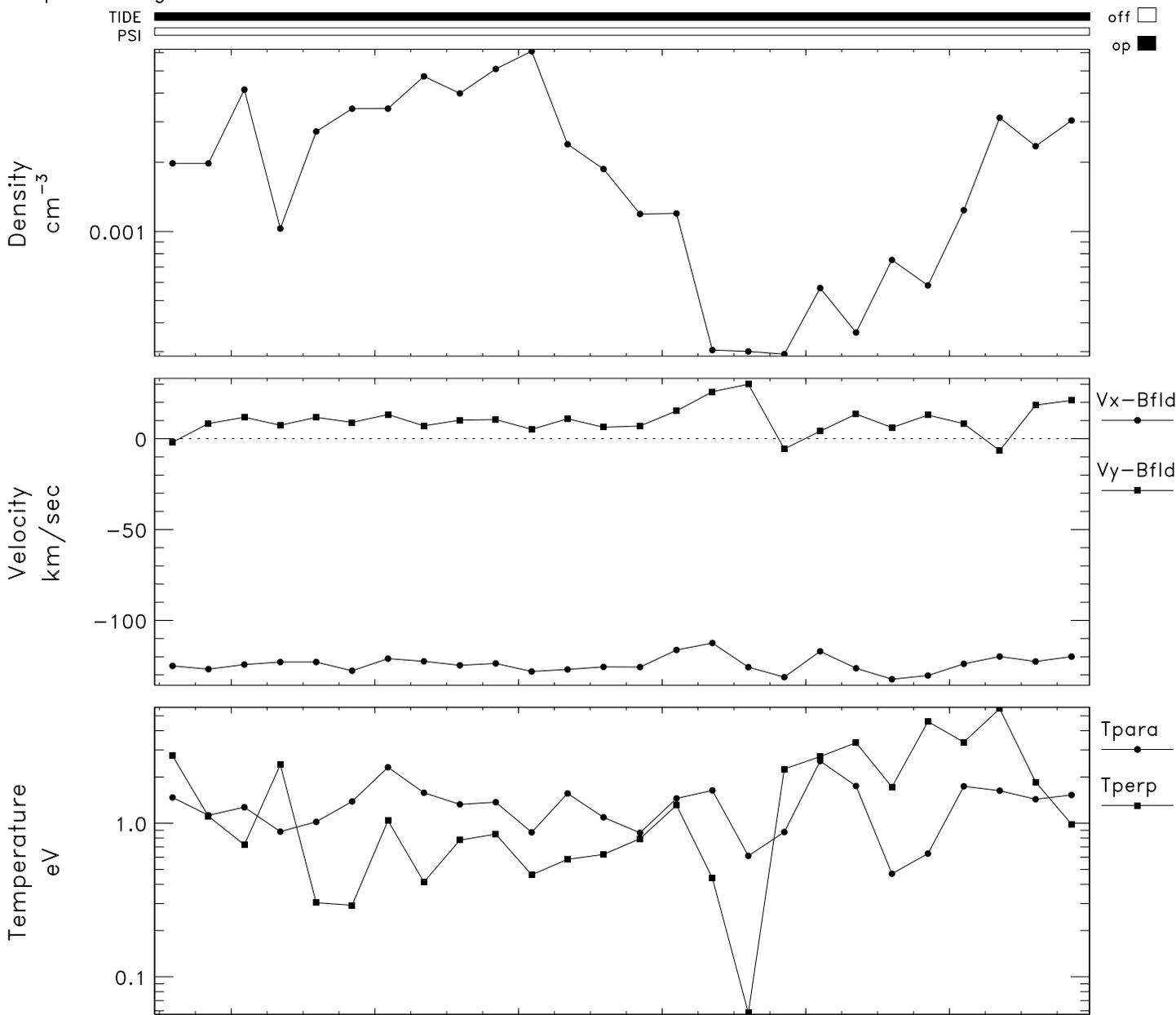
s/c potential = 0.0000
 attitude: 01100903.cdf
 orbit: 01100903.cdf
 level-zero: 01100900.dat

TIDE Moments
 start time: 10/09/01 21:44:56
 stop time: 10/09/01 21:57:57
 s/c potential from file
 5 spins averaged

moments calculation ranges:
 Obs.energy: 0.32 – 83.92 eV
 spin angle: 180.00° – 225.00°
 polar channels: 1 – 7

Stops(H+)

mir stp
 standby
 off
 op



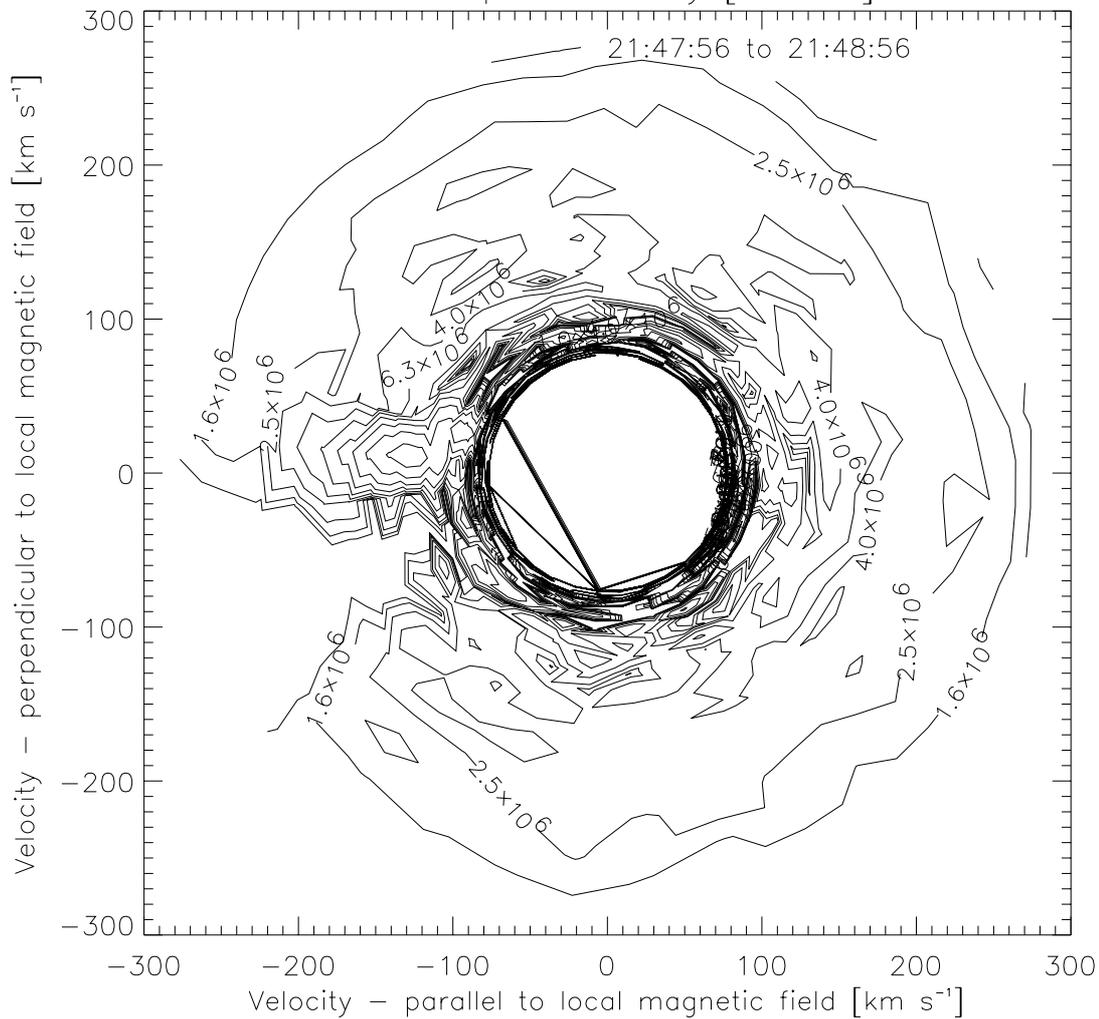
time	21:46	21:48	21:50	21:52	21:54	21:56	hr:mn
Re	6.7	6.6	6.6	6.6	6.5	6.5	Re
Lshell	12.8	12.9	13.0	13.1	13.2	13.3	
mlt	0.1	0.2	0.2	0.2	0.2	0.2	hrs
mlat	43.7	44.1	44.4	44.8	45.2	45.6	degs
invlat	73.8	73.8	73.9	73.9	74.0	74.1	degs

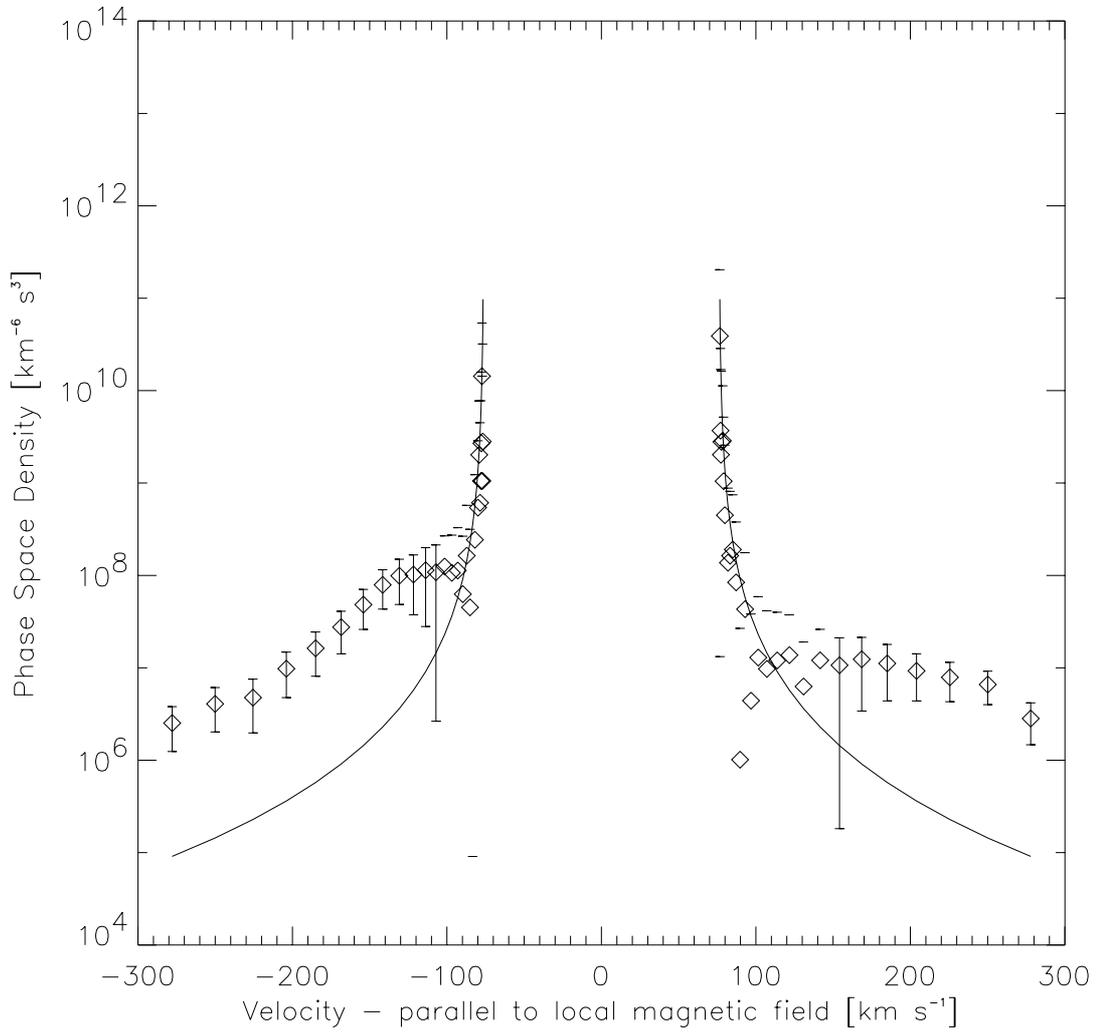
minimum count subtracted
 tide_lz_v5.5.0
 Fri Oct 12 10:16:36 2001
 plot: t0110092144_2157_01.q7199.mom.ps

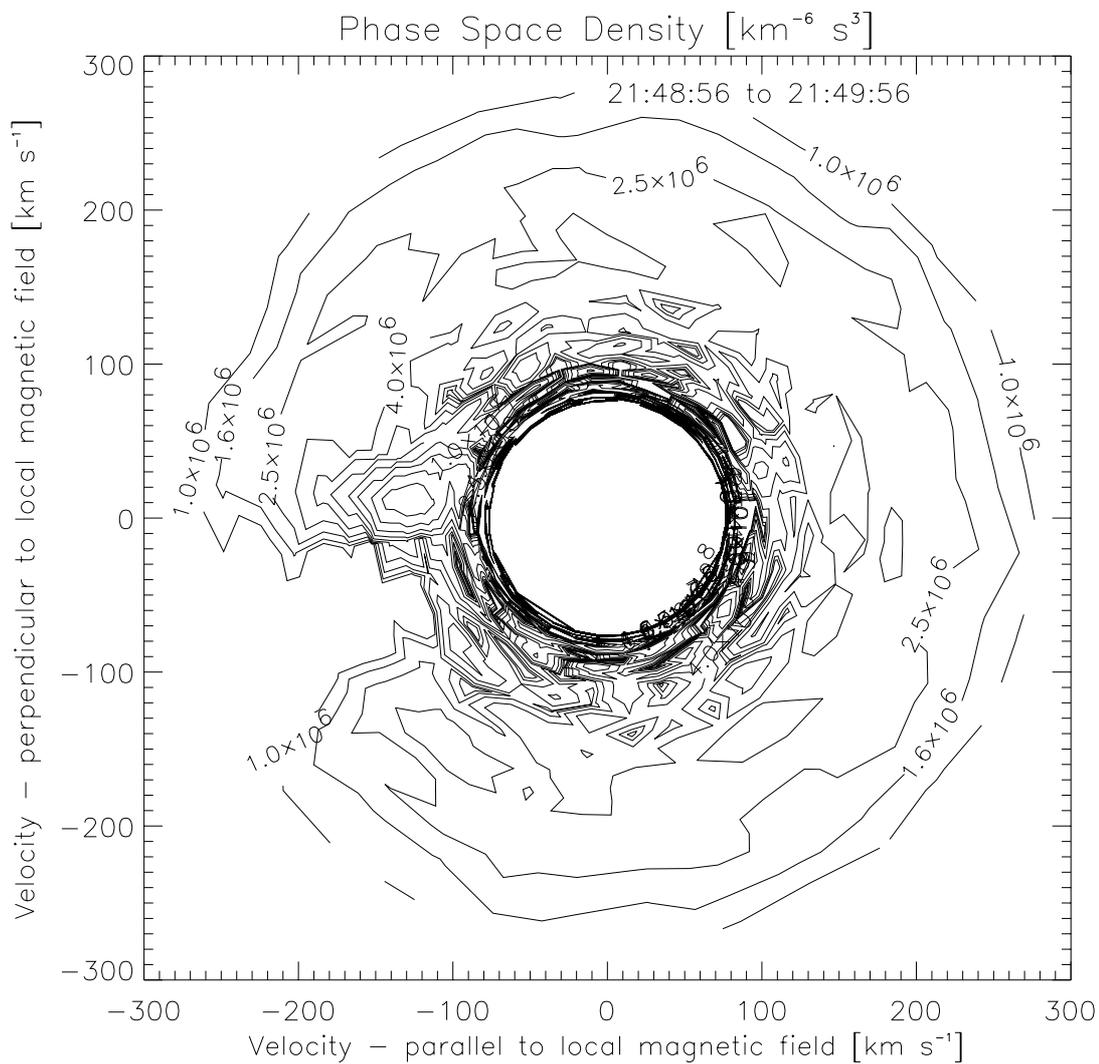
sector_sens: no correction
 calibration: tide_calib.v6
 mass_calibration: mass_calib.v7
 ion_mask: t011009_v2.mask

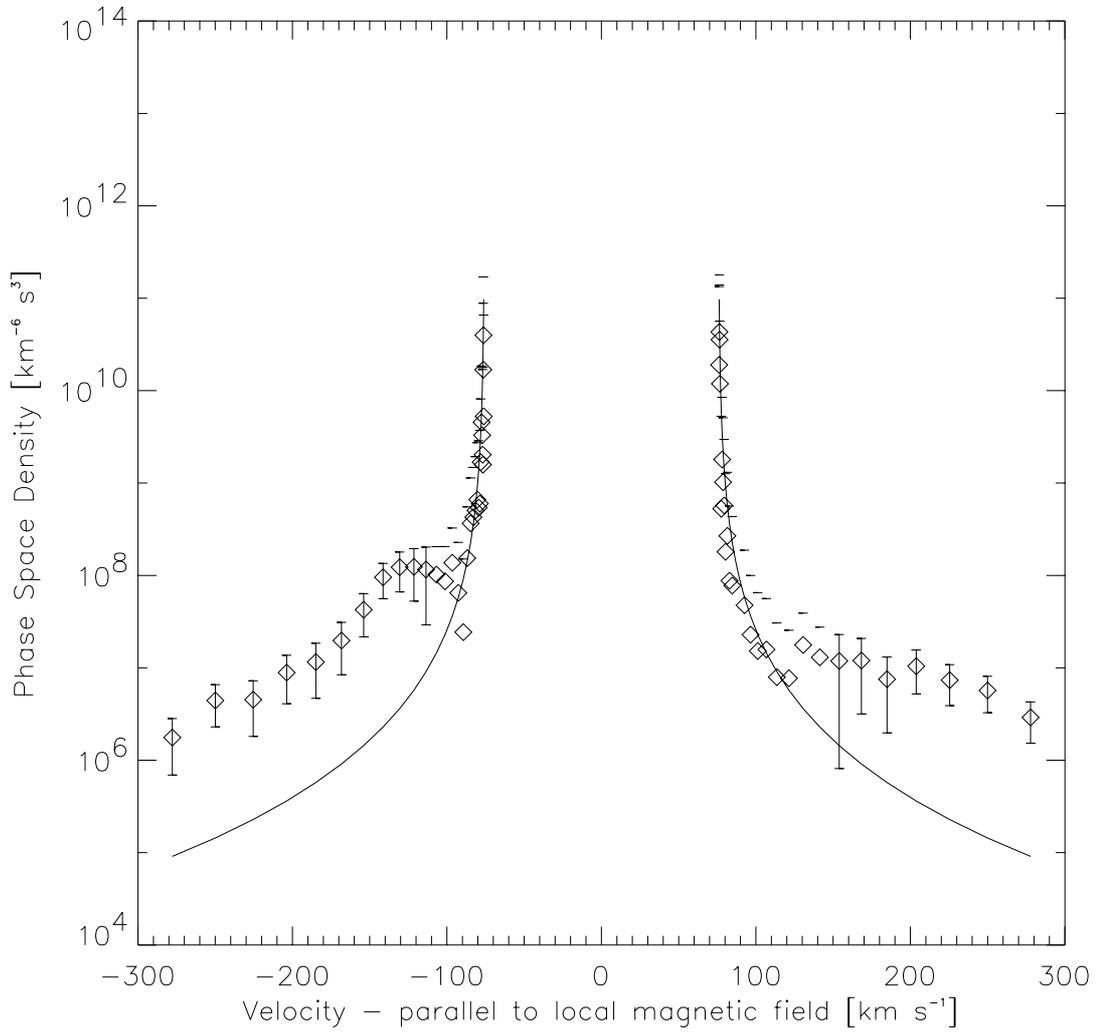
no energy fill, no ion separation
 attitude: 01100903.cdf
 orbit: 01100903.cdf
 level-zero: 01100900.dat

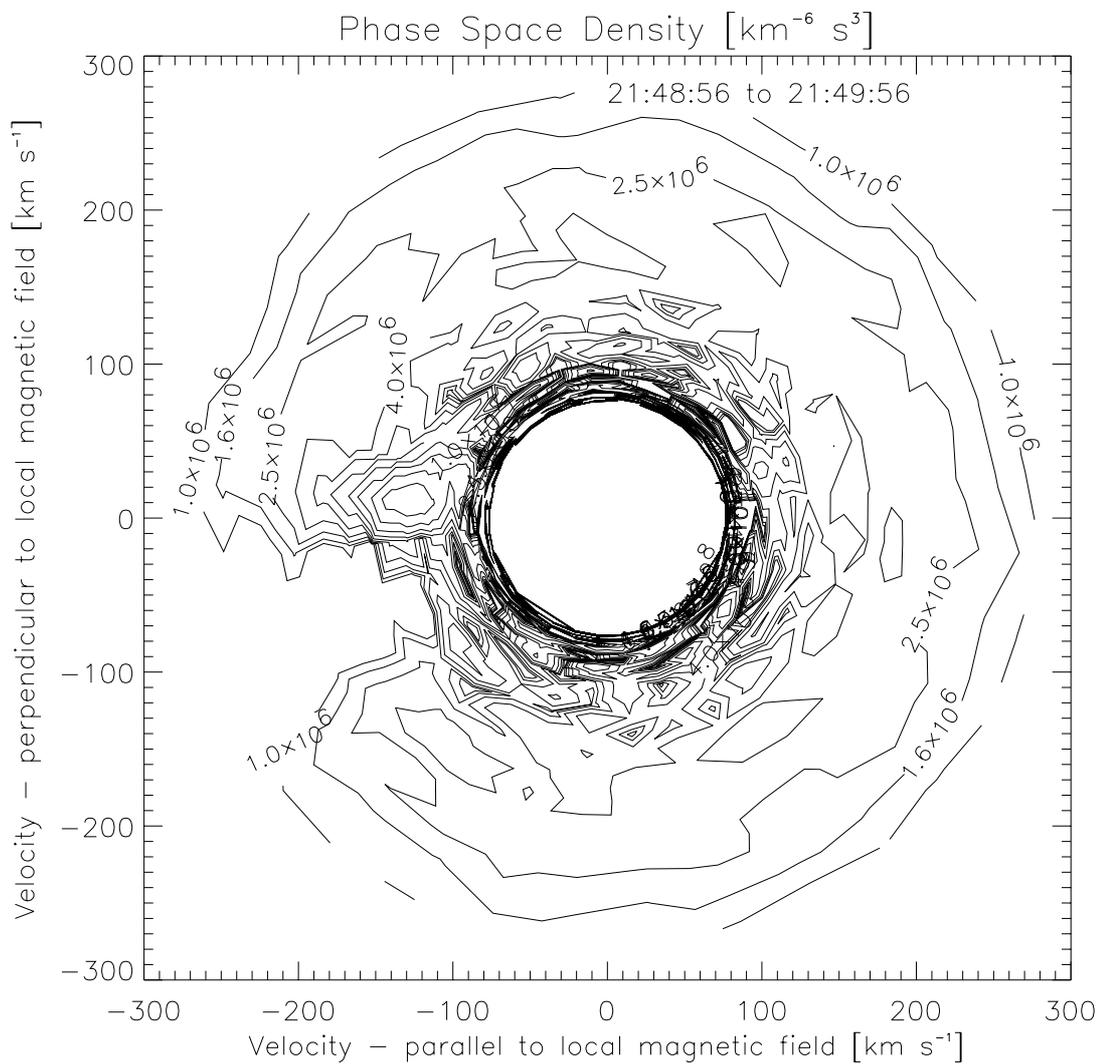
Phase Space Density [$\text{km}^{-6} \text{s}^3$]

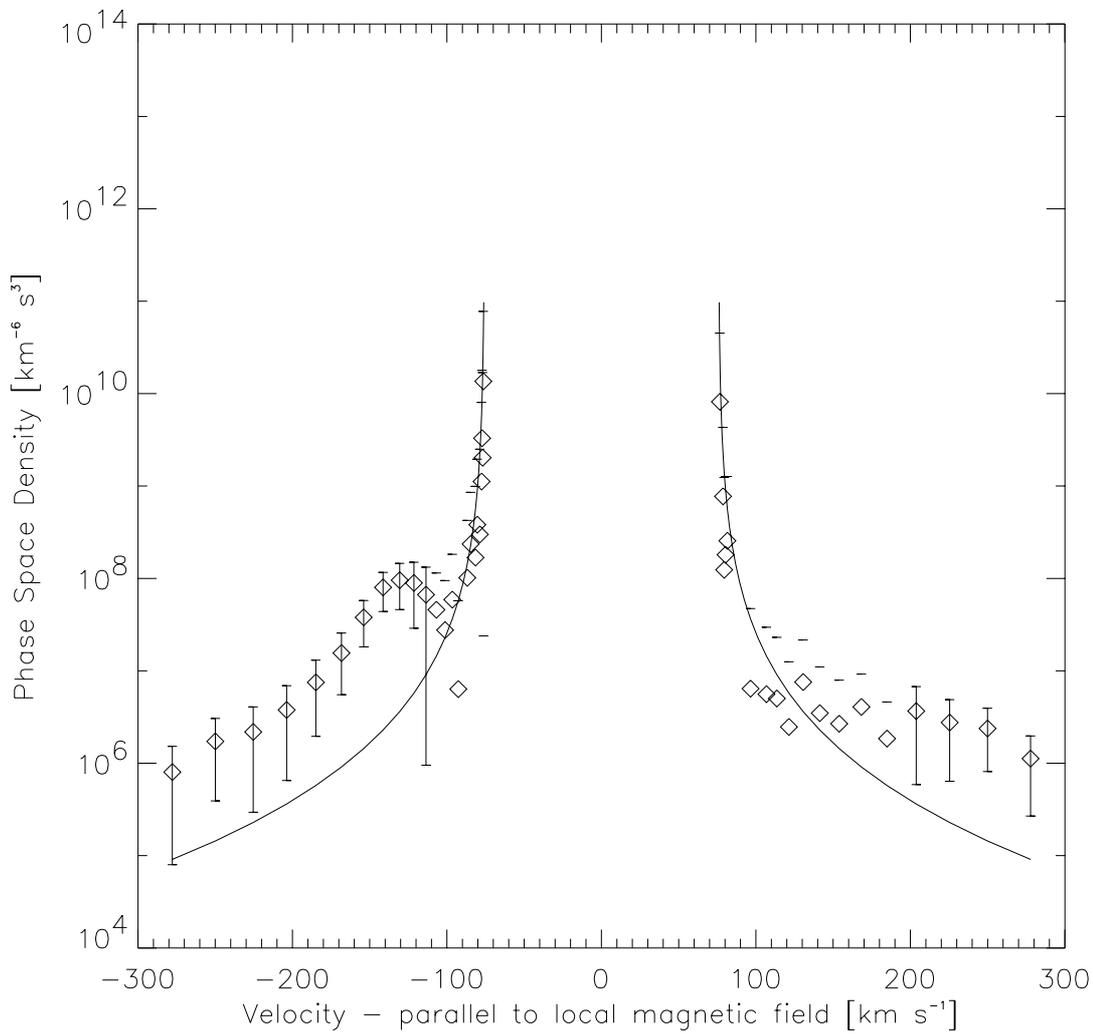




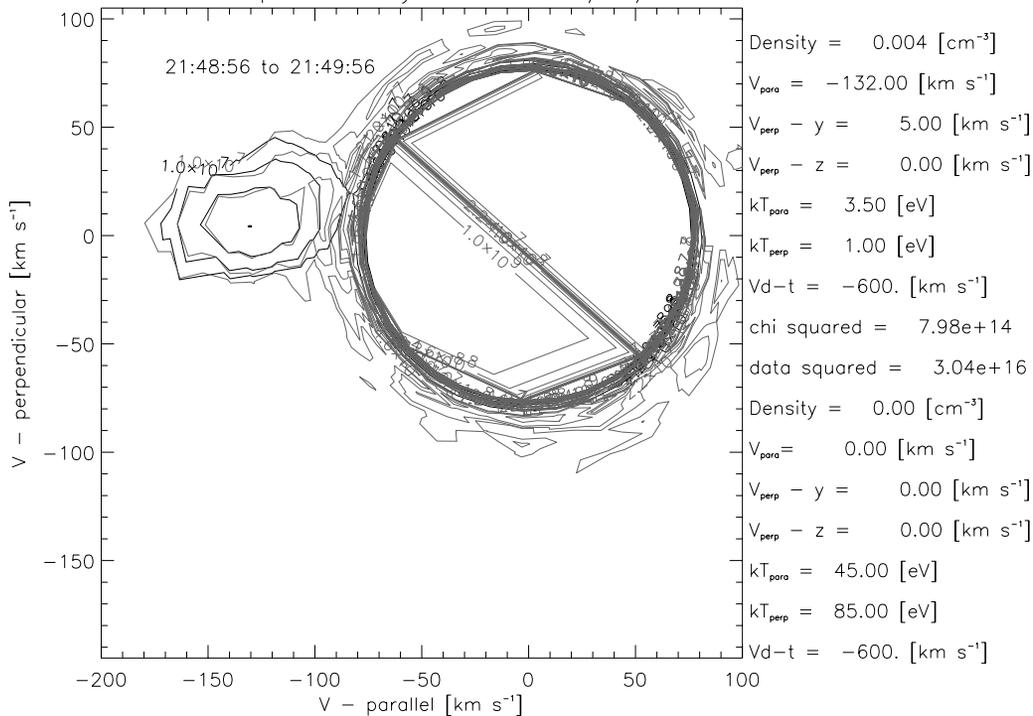


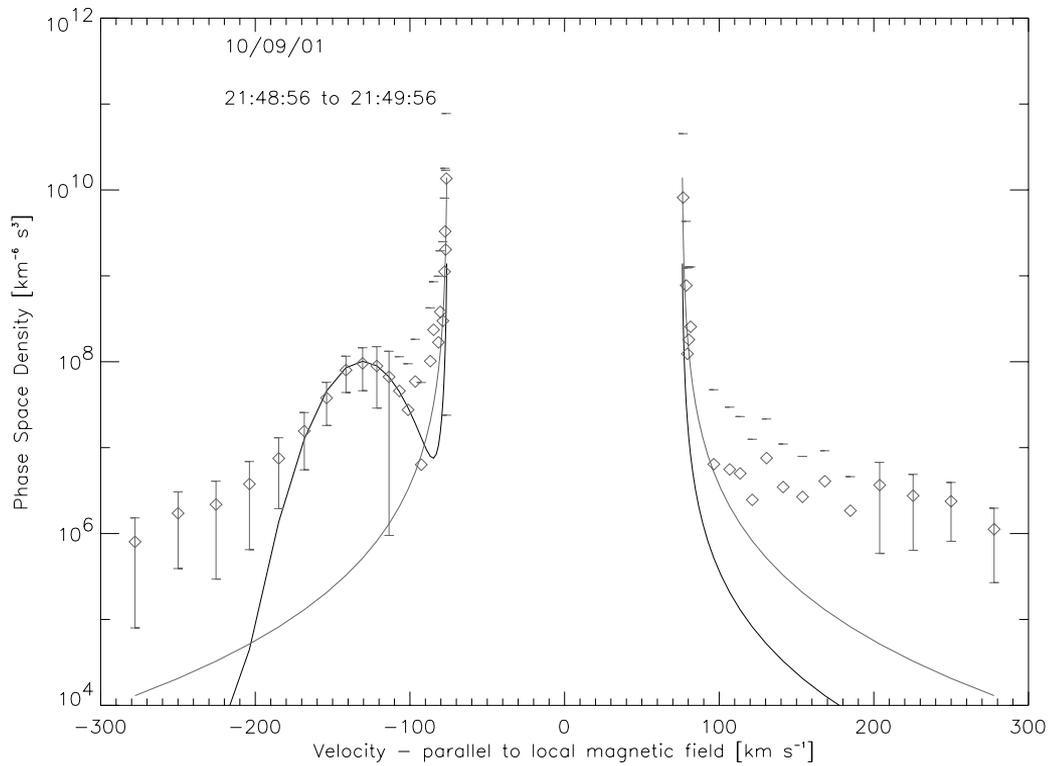






Phase Space Density from TIDE 10/09/01





"Polar Wind" in the Plasmasheet

Polar passes through the plasmasheet near local midnight on Oct. 9, 2001.

Figure 1 is the summary plot for this period. Note the magnetic field reversal at 1500UT where the field changed from sunward to antisunward in a distance of about 400 km. Narrow, field-aligned beams were observed streaming tailward (particularly noticeable at 2100-2200UT).

Figure 2 shows the local magnetic field direction from 1445 - 1500 UT. These are unit vectors derived from the onboard angles provided by MFE.

Figure 3-5 are 2-D projections of the magnitude of the local magnetic field in GSM coordinates (derived from onboard angles provides by MFE)

Figure 6 is a PSD spectrogram which shows these ions at better resolution. Notice their narrow pitch angle signature.

Figure 7 is a plot of the moments over the spin range of 180° to 225° and energy range of 0-84eV.

Figures 8-13 are alternating 2-D PSD plots and corresponding 1-D cuts along the magnetic field direction. These are 10-spin averages. Note that in most cases in the 2-D plots the beams are so narrow that the sharp edges of the spin bins can be seen.

Figures 14-15 show a model comparison (parameters on the right of Fig. 10) for one period. Note the large temperature anisotropy with $T_{\text{PARA}} > T_{\text{PERP}}$ as expected. Also note the extremely low density that TIDE is able to detect!